

WHAT IS CLAIMED IS:

1. A method for maintaining a communication session between telephony devices, comprising:

5 establishing a first TCP/IP signaling communication link between a first telephony device and a proxy, the first TCP/IP signaling communication link being operable to communicate first keep alive signals between the proxy and the first telephony device;

10 establishing a second TCP/IP signaling communication link between a primary gatekeeper and the proxy, the second TCP/IP signaling communication link being operable to communicate second keep alive signals between the proxy and the primary gatekeeper;

15 terminating the first and second TCP/IP signaling communication links at the proxy; and

maintaining a communication session between the first telephony device and a second telephony device if the second keep alive signals are interrupted.

20 2. The method of Claim 1, further comprising:

establishing a third TCP/IP signaling communication link between the second telephony device and the proxy, the third TCP/IP signaling communication link being operable to communicate third keep alive signals between the proxy and the second telephony device; and

25 terminating the third TCP/IP signaling communication link at the proxy.

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3. The method of Claim 2, wherein the proxy is operable to receive first and second call control signals from the first and second telephony devices, respectively, the proxy being further operable to pass through the first and second call control signals to the primary gatekeeper, if communications with the primary gatekeeper are available.

4. The method of Claim 3, further comprising:  
10 a backup gatekeeper; and  
wherein the proxy is operable to communicate the first and second call control signals to the backup gatekeeper if the communications with the primary gatekeeper are interrupted.

5. The method of Claim 1, further comprising:  
15 monitoring communications between the proxy and the gatekeeper; and  
transferring control of the communication session to  
20 a backup gatekeeper, if the communications between the proxy and the gatekeeper are interrupted.

6. The method of Claim 5, wherein the communications between the proxy and the gatekeeper are monitored using a  
25 heartbeat mechanism.

7. The method of Claim 1, wherein the first telephony device utilizes a protocol configured to automatically tear down the communication session between the first telephony device and the second telephony device if an interruption of TCP/IP connectivity with the gatekeeper is detected at the first telephony device.

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8. The method of Claim 1, wherein the first and second telephony devices communicate using the ITU H.323 suite of protocols.

5 9. The method of Claim 1, wherein the proxy is configured to provide a subset of features available from the gatekeeper, if communications between the proxy and the gatekeeper are interrupted.

10 10. The method of Claim 8, wherein the communication session is established using H.225 call control signals.

11. The method of Claim 1, wherein the communication session between the first and second telephony devices comprises a Voice over Internet Protocol (VoIP) communication session.

12. The method of Claim 1, wherein the communication session between the first and second telephony devices comprises a Real-time Transport Protocol (RTP) communication session.

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13. A method for maintaining a communication session between telephony devices, comprising:

establishing a first TCP/IP signaling communication link between a first telephony device and a first proxy.

the first TCP/IP signaling communication link being operable to communicate first keep alive signals between the first proxy and the first telephony device;

establishing a second TCP/IP signaling communication link between a second telephony device and a second proxy.

10 the second TCP/IP signaling communication link being  
operative to communicate second keep alive signals between  
the second telephony device and the second proxy;

terminating the first and second TCP/IP signaling communication links at the first and second proxies, respectively:

establishing third and fourth TCP/IP signaling communication links between the first and second proxies, respectively, and a primary gatekeeper. the third and

fourth TCP/IP signaling communication links being operable  
20 to communicate third and fourth keep alive signals between  
the first and second proxies, respectively, and the primary  
gatekeeper; and

25 maintaining a communication session between the first  
and second telephony devices if the third or fourth keep  
alive signals are interrupted.

14. The method of Claim 13, wherein the first and second proxies are operable to receive first and second call control signals from the first and second telephony devices, respectively, the first and second proxies being 5 further operable to pass through the first and second call control signals, respectively, to the primary gatekeeper if communications with the primary gatekeeper are available.

10 15. The method of Claim 14, further comprising:  
a backup gatekeeper; and  
wherein the first and second proxies are operable to communicate the first and second call control signals to the backup gatekeeper if the communications with the primary gatekeeper are interrupted.

15 16. The method of Claim 13, further comprising:  
monitoring communications between the first proxy and the primary gatekeeper; and  
transferring control of the communication session to 20 a backup gatekeeper, if the communications between the first proxy and the gatekeeper are interrupted.

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17. A method for maintaining a communication session between telephony devices, comprising:

establishing a first TCP/IP signaling communication link between a first telephony device and a primary proxy,

5 the first signaling communication link being operable to communicate first keep alive signals between the primary proxy and the first telephony device;

establishing a second TCP/IP signaling communication link between a second telephony device and the primary proxy,

10 the second TCP/IP signaling communication link being operable to communicate second keep alive signals between the second telephony device and the primary proxy;

terminating the first and second TCP/IP signaling communication links at the primary proxy;

15 establishing a third TCP/IP signaling communication link between the primary proxy and a gatekeeper, the third TCP/IP signaling communication link being operable to communicate third keep alive signals between the primary proxy and the gatekeeper; and

20 maintaining a communication session between the first and second telephony devices if the third keep alive signals are interrupted.

18. The method of Claim 17, further comprising:  
monitoring communications with the primary proxy;  
transmitting the first and second keep alive signals  
from the first and second telephony devices, respectively,  
5 to a backup proxy, if the communications with the primary  
proxy are interrupted;

the primary and backup proxy each sharing a common  
logical IP address; and

10 maintaining the communication session between the  
first and second telephony devices if the communications  
with the primary proxy are interrupted.

19. The method of Claim 18, wherein the primary and  
backup proxies share the common logical address according  
15 to the Hot-Standby Router Protocol (HSRP).

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20. A system, comprising:

a proxy being operable to communicate first keep alive signals with a first telephony device;

5 a primary gatekeeper being operable to communicate second keep alive signals with the proxy; and

the proxy being further operable to terminate first and second TCP/IP communication links between the first telephony device and the proxy, and the primary gatekeeper and the proxy, respectively, such that a communication session between the first telephony device and a second telephony device is maintained if the second keep alive signals are interrupted.

15 21. The system of Claim 20, wherein the proxy is further operable to pass through call control signals received from the first and second telephony devices, to the primary gatekeeper, if communications with the primary gatekeeper are available.

20 22. The system of Claim 21, wherein the proxy is further operable to transmit the call control signals to a backup gatekeeper, if the communications with the primary gatekeeper are not available.

10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95

23. Logic encoded in media for maintaining a communication session between telephony devices, the logic being operable to perform the following steps:

establish a first TCP/IP signaling communication link  
5 between a first telephony device and a proxy, the first TCP/IP signaling communication link being operable to communicate first keep alive signals between the proxy and the first telephony device;

establish a second TCP/IP signaling communication link  
10 between a primary gatekeeper and the proxy, the second TCP/IP signaling communication link being operable to communicate second keep alive signals between the proxy and the primary gatekeeper;

terminate the first and second TCP/IP signaling communication links at the proxy; and  
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maintain a communication session between the first telephony device and a second telephony device if the second keep alive signals are interrupted.

20 24. The logic encoded in media of Claim 23, wherein the logic is further operable to:

establish a third TCP/IP signaling communication link between the second telephony device and the proxy, the third TCP/IP signaling communication link being operable to communicate third keep alive signals between the proxy and the second telephony device; and  
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terminate the third TCP/IP signaling communication link at the proxy.

25. The logic encoded in media of Claim 24, wherein  
the proxy is operable to receive first and second call  
control signals from the first and second telephony  
devices, respectively, the proxy being further operable to  
5 pass through the first and second call control signals to  
the primary gatekeeper, if communications with the primary  
gatekeeper are available.

26. The logic encoded in media of Claim 25, further  
10 comprising a backup gatekeeper and wherein the proxy is  
operable to communicate the first and second call control  
signals to the backup gatekeeper if the communications with  
the primary gatekeeper are interrupted.

27. A system, comprising:

means for establishing a first TCP/IP signaling communication link between a first telephony device and a proxy, the first TCP/IP signaling communication link being operable to communicate first keep alive signals between the proxy and the first telephony device;

means for establishing a second TCP/IP signaling communication link between a primary gatekeeper and the proxy, the second TCP/IP signaling communication link being operable to communicate second keep alive signals between the proxy and the primary gatekeeper;

means for terminating the first and second TCP/IP signaling communication links at the proxy; and

means for maintaining a communication session between the first telephony device and a second telephony device if the second keep alive signals are interrupted.

28. The system of Claim 27, further comprising:

means for establishing a third TCP/IP signaling communication link between the second telephony device and the proxy, the third TCP/IP signaling communication link being operable to communicate third keep alive signals between the proxy and the second telephony device; and

means for terminating the third TCP/IP signaling communication link at the proxy.

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29. The system of Claim 28, wherein the proxy is operable to receive first and second call control signals from the first and second telephony devices, respectively, the proxy being further operable to pass through the first and second call control signals to the primary gatekeeper, if communications with the primary gatekeeper are available.

30. The system of Claim 29, further comprising a  
10 backup gatekeeper and wherein the proxy is operable to  
communicate the first and second call control signals to  
the backup gatekeeper if the communications with the  
primary gatekeeper are interrupted.